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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER RIGHTS

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MEMORANDUM

TO: Bob Morgan
Lee Sim
Jim Riley
John Mabey

FROM: Jerry Olds JPO

SUBJECT: Utah Lake Distribution Plan

DATE: April 21, 1992

Attached for your review and comment is a draft of the cover letter transmitting the "final draft" of the distribution plan for the Utah Lake drainage basin. Also attached are the revised plan and attachments. Please review these documents very carefully and submit any suggested changes to me by Tuesday, April 28. I would like to send out the final draft by the end of the month.

If you have any questions concerning any of the changes, please feel free to contact me. Modifications to the October 15, 1991 draft are as follows: deletions are shown in brackets—[] and additions are underlined. I am assuming that we do not need to meet as a group to discuss this latest draft. However, if you have serious concerns about any aspect of it, we could meet and resolve any problems.

/wk

attachments

April 30, 1992

Dear Water Users:

It has been nearly a year since we held the first public meeting to announce the proposed distribution plan for the Utah Lake drainage basin. During this time we have held four public meetings and submitted two drafts of the plan to the water users for their comments. We have received some very good comments and we have reviewed them very carefully and incorporated them into the plan, as appropriate.

Based upon the input that we have received and the comments that were submitted regarding the October 15, 1991 draft of the proposed distribution plan, the State Engineer is proposing the following course of action:

- A final draft of the proposed distribution plan will be submitted to the water users for their review and comment (enclosed).

- The Division of Water Rights staff will ensure that all measuring devices are installed and operational which are necessary to implement the plan. In addition, the Division will provide training to the river commissioners to ensure that they understand their role and responsibility in distributing water under the plan.

- During the period from May through September, 1992, the Division will simulate the effects on the hydrologic system of the distribution plan using actual water supply data. The results of this study and any proposed modifications to the plan will be presented to the water users at a public meeting in the fall of 1992.

- All comments on the April 30, 1992 final draft of the distribution plan should be submitted by September 15, 1992.

- Hold a public meeting in late September or early October, 1992 to review the activities during the past six months. Discuss any suggested modifications to the proposed distribution plan.

- Issue a final interim distribution plan to be implemented for a one year period from November 1, 1992 to October 31, 1993.

- The plan will be administered on a yearly interim basis over a three to five years, depending upon the water supply conditions and data collected. At the end of each year, the State Engineer will evaluate the data and modify the interim plan as necessary.

Enclosed is a final draft of the proposed distribution plan for the Utah Lake drainage basin for your review and comment. Comments should be submitted to the Division of Water Rights by September 15, 1992. We have not made wholesale changes to the distribution plan or the attachments. From the comments which were submitted concerning the October 15, 1991 draft there appeared to be several issues that were unclear and we have attempted to clarify them.

We realize that the distribution plan does not resolve all of the issues. As we have indicated previously, this is **NOT** an adjudication and a number of the issues that have been raised will have to be addressed during the general adjudication procedure. We are very confident that the distribution plan will facilitate future water management. From our prospective, it makes more sense to begin trying to formulate solutions now, rather than wait until we are confronted with a crisis. We are hopeful that our proposed plan will update distribution practices to reflect current water use practices within the parameters of existing water rights.

As we work through the process as set forth above, we will be happy to meet with you to discuss any aspect of the proposed distribution plan. We appreciate your interest and participation in this process and will keep you apprised of any future developments concerning this matter.

Sincerely,

Robert L. Morgan, P.E.
State Engineer

RLM/wk

Enclosure

FILENAME: WTRUSR.UTL

WORKING DRAFT
April 30, 1992

WATER DISTRIBUTION [OF WATER WITHIN] PLAN FOR THE UTAH LAKE DRAINAGE BASIN

1.0 Introduction

Utah is experiencing significant growth in those counties located along the Wasatch Front. Associated with this growth we are seeing more demands being placed on our limited water resources, such as the conversion from irrigation to municipal water use.

With the projects currently under construction and those planned for the future, it would appear that Utah Lake and its major tributaries will be facing a number of changes in the manner in which these systems have historically been operated. This is not to imply that such changes will have a negative impact, rather with proper planning these changing water use practices can be handled and existing water rights protected. In addition, there are a number of major transbasin diversions into the Utah Lake drainage which need to be better regulated. Diversions between the basins or subbasins presently total over 300,000 acre-feet annually.

Within recent years, there have been a number of requests made of the State Engineer to make decisions on matters which significantly affect water distribution in the Utah Lake drainage basin. After reviewing this matter, it appears that some direction is needed to better clarify the relationship between water rights in the basin; particularly between storage rights in Utah Lake and storage rights on the upstream tributaries. The State Engineer believes that in order for the river commissioners to properly administer the numerous diversions, the extent of the rights and their relationship, one with another, needs to be fully understood by everyone involved. In simple terms, we need to begin to manage the water rights on the Provo River, Spanish Fork River, Utah Lake, Jordan River, and other sources in the basin as one system. The objective is not to remove local control or involvement in the management of the waters. Rather, the objective is to ensure the equitable distribution of water, according to the respective water rights, and to address problems from a more regional point of view.

The State Engineer is submitting this proposed distribution plan under authority of Sections 73-2-1, 73-5-1, -3, and -4, Utah Code Annotated 1953, to distribute the waters in the Utah Lake drainage basin. We realize that some of the issues which are presented in this document are beyond our administrative authority

in distribution matters, and it is not our intent to resolve such issues in implementing this plan. Such items will be addressed and ultimately resolved in the court adjudication process as set forth under Chapter 4, Title 73, Utah Code Annotated. This proposed distribution plan is **NOT** part of the adjudication process, nor will it prejudice anyone's claims during such action.

The future elevation of Utah Lake is of concern to many people. In this regard, the State Engineer does not have authority to consider all values associated with the lake in regulating the water rights. Under the distribution plan we are not requiring Utah Lake to be operated at a lower level. Rather, we are proposing to regulate the distribution of water according to existing water rights, as required by statutes.

This document is intended to establish a general framework within which the respective rights can be administered. The distribution guidelines follow the priority doctrine of "first in time, first in right"; and where rights are equal in priority, each of those rights receives a proportionate share of the total water available to divert under that priority. We realize that flexibility will be required as the plan is implemented, and many problems that arise will need to be handled on a case-by-case basis. We also note that there are many agreements between water users, and such agreements will be taken into account, when appropriate.

The many complex issues involved in the implementation of this distribution plan will require an understanding of the water rights and water supply conditions on a number of the major river systems in the State. The State Engineer is committed to spend the necessary time and resources to ensure that the water users have an opportunity to thoroughly understand and comment on the distribution plan before it is implemented.

The issues presented in this document have been divided into five subject areas:

- Water rights in Utah Lake
- Relationship between storage rights in Utah Lake and upstream reservoirs
- Direct flow water rights
- Other distribution issues
- Issues to be resolved through the general adjudication procedure

For each subject there is a background section and a distribution guidelines section. The background section is intended to give the reader some general information about the issue and some justification for the distribution guidelines. [This proposal does not apply to those waters imported into the Utah Lake drainage.] Transbasin diversions (imported water) into the Utah Lake drainage will be administered in accordance with their individual water rights.

2.0 DEFINITIONS OF TERMS USED IN PROPOSED DISTRIBUTION PLAN

Active Storage (Utah Lake): The storage capacity of Utah Lake between compromise elevation and 9.2 feet below compromise (the maximum active storage is 741,700 acre-feet).

Adjudication: The judicial process by which all water right claims in a given hydrologic area are evaluated, defined and then established by court decree pursuant to Chapter 4, Title 73, Utah Code Annotated.

Booth Decree: A 1909 court case: Salt Lake City Corp., Utah and Salt Lake Canal Co., East Jordan Irrigation Co., North Jordan Irrigation Co. and South Jordan Canal Co. (Plaintiffs) versus J. A. Gardner and A. J. Evans (Defendants). The Booth Decree covered water rights in Utah Lake and the Jordan River.

Compromise Elevation: The maximum legal storage elevation in Utah Lake. Compromise elevation was first established in 1885, and was recently modified in 1985 to be 4489.045 feet above mean sea level. When the lake is at this elevation, the total storage capacity is approximately 870,000 acre-feet, of which [721,700] 741,700 acre-feet is active storage capacity and 128,300 acre-feet is inactive storage capacity. Whenever the level of Utah Lake is above the compromise level, the lake control gates shall be fully opened. The exception to this rule occurs when fully opening the control gates would cause the Jordan River to exceed a maximum flow rate that is specified in the 1985 Compromise Agreement (Civil No. 64770)

Delivery Schedule: A schedule listing the allowable diversion rate in cubic feet per second per acre, for specific time periods during the irrigation season.

Direct Flow Right: A water right that diverts water from a surface source according to its respective priority date.

Distribution Plan: Guidelines for the distribution of water within a drainage basin or hydrologic system.

Diversion Requirement: The amount of water needed to satisfy the beneficial uses set forth under a water right.

Inactive Storage (Utah Lake): The portion of Utah Lake that is not accessible to the pumps, and therefore, cannot be diverted. The inactive storage is currently estimated to be 128,300 acre-feet (9.2 feet below compromise)

Irrigation Duty: The annual quantity of water in acre-feet per acre considered to be reasonably necessary to meet the beneficial use requirements of irrigated land. The irrigation duty takes into consideration the consumptive use requirements of crops, irrigation efficiency and conveyance losses.

Morse Decree: A 1901 decree resulting from a series of court cases: Case No. 2861 - Salt Lake City Corp. (Plaintiffs) versus Salt Lake City Water and Electrical Power Co. (Defendant); Case No. 3449 - J. Geoghegan (Plaintiff) versus Salt Lake City Corp.(Defendant); and Case No. 3459- J. Geoghegan (Plaintiff) versus Utah and Salt Lake Canal Co. (Defendant). This decree defined the water rights on the Jordan River with respect to each other.

Priority Storage: Legal storage under a water right. Such water stored is not subject to call by other right(s) and can be diverted and used in accordance with the right.

Primary Storage (Utah Lake): The first 125,000 acre-feet of active storage in Utah Lake which is set aside to satisfy the diversion requirement of the primary rights in Utah Lake in years of successive drought. See figure 1.

Primary Storage Rights (Utah Lake): The water rights defined in the Morse decree to have storage rights in Utah Lake.

Proposed Determination Book: The State Engineer's report and recommendation to the district court in general adjudication proceedings of all the water rights within the adjudication drainage area.

Provo River Decree: A 1921 decree resulting out of the court case: Provo Reservoir Company vs. Provo City (Case No. 2888). The Provo River decree defined certain water rights in the Provo River drainage.

Secondary Storage Rights (Utah Lake): The storage rights in Utah Lake established by applications to appropriate water and as confirmed by the Booth Decree.

Storage Right: The legal right to store water in accordance with a water right's respective priority date.

Subbasin: Individual drainage system within a larger drainage basin. For example, the Provo River system can be considered to be a subbasin within the larger Utah Lake drainage basin.

System Storage: Includes the total active storage waters in Utah Lake, excluding the primary storage, plus water stored in upstream reservoirs under later priority date water rights that is subject to call by Utah Lake rights. The maximum value of system storage is 616,700 acre-feet. See figure 1.

Real-time gages: A measuring device that allows instantaneous access to data.

Transbasin diversions: Imports or exports of water from one drainage basin or distribution system to another.

Welby-Jacob Memorandum Decisions: Seven memorandum decisions issued in 1989 by the State Engineer regarding change applications which provided for the transfer of high quality Provo River water from the Welby and Jacob districts of the Provo River Project for use by the Salt Lake County Water Conservancy District (SLCWCD). The water supply for the Welby and Jacob districts was replaced under both primary and secondary storage rights acquired in Utah Lake.

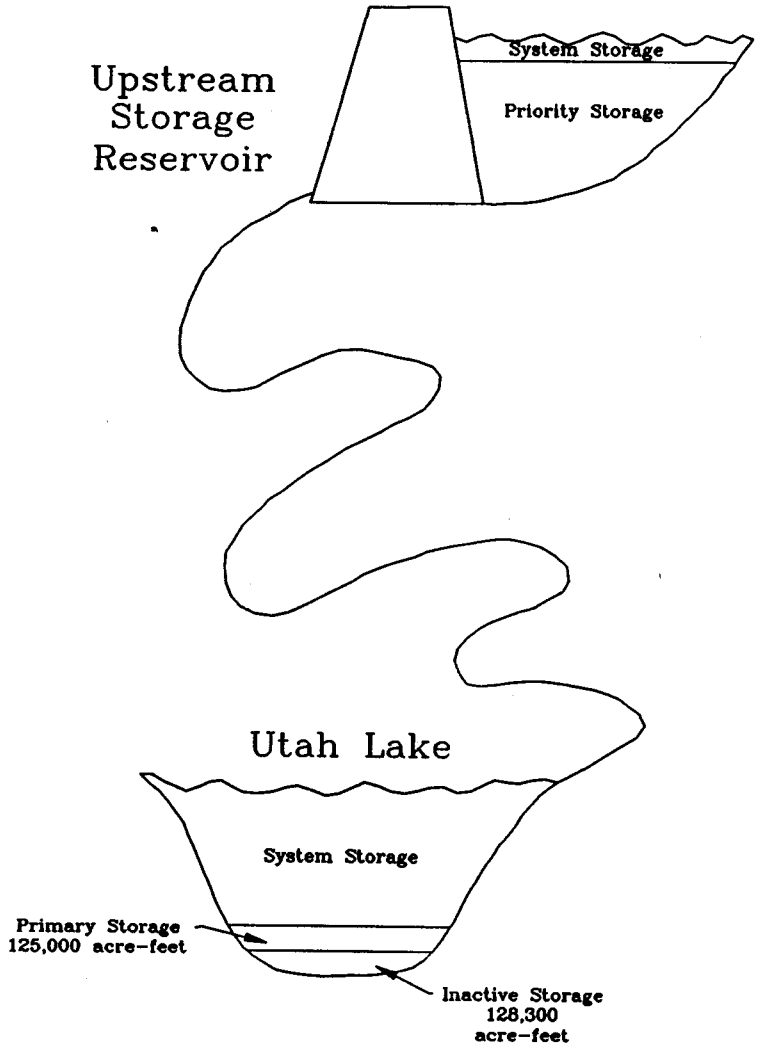

Figure 1 – Schematic drawing of various storage terms used in the Distribution Plan

3.0 Water Rights in Utah Lake

3.1 Background

There is not a clear understanding of how the uses of Utah Lake water relate to the quantity of storage in Utah Lake. The approach set forth in this document looks at the water rights served from Utah Lake in terms of beneficial use, which is referred to as the "annual diversion requirement." Water in Utah Lake is stored in order for the users to meet their diversion requirement. Thus, the storage capacity of Utah Lake does not define the water rights. Rather, it is the quantity of water necessary to satisfy the beneficial uses that is the limit and measure of the water rights.

The relationship of one water right to another is also not generally understood. The water rights in Utah Lake were set forth in both the Morse (1901) and Booth [(1908)] (1909) decrees. The Morse decree identified two groups of water rights: 1) Direct flow rights on the Jordan River; and 2) [Storage] Water rights in Utah Lake. The Booth decree [(1908)] (1909) allowed for additional appropriations of water from Utah Lake and set a maximum limit on the diversions under the storage rights that were set forth in the Morse decree. This maximum limit was 185,000 acre-feet annually and in part is based upon a 3.0 acre-feet per acre duty. In this proposed distribution plan, we refer to the rights that were defined in the Morse decree as primary storage rights, and all subsequent rights established under applications to appropriate water [and confirmed by the Booth decree] as secondary storage rights.

In 1989, the State Engineer approved a number of change applications, in conjunction with the so-called Welby-Jacob exchange, to transfer the use of water under the primary and secondary storage rights in Utah Lake. In evaluating these change applications, the sole supply irrigated acreage for each water right was determined. For the purposes of this document, the same sole supply acreages as set forth in the respective memorandum decisions, will be used to calculate the allowable annual diversion requirement. The acreage amounts used in this plan, and in the Welby-Jacob Exchange Project, are subject to adjudication by the court. This distribution plan does not purport to adjudicate these acreage amounts.

In the "Proposed Determination of Water Rights in Utah Lake and Jordan River Drainage Area, Salt Lake County, West Division" (Proposed Determination), the State Engineer has recommended an irrigation duty of 5.0 acre-feet per acre. This duty also appears reasonable for those lands located east of the Jordan River. The proposed determination book covering the west side of the Jordan River indicates that potential conveyance losses for canals over one mile in length are not included in the irrigation duty. Such losses are to be determined in a supplemental report to the court

in conjunction with the general adjudication proceedings. Since the potential conveyance losses have not been finalized, a diversion requirement of 5.0 acre-feet per acre is used to determine the total annual diversion requirement for the irrigation rights.

Before getting into the distribution guidelines, some basic information on Utah Lake may be helpful. The total storage capacity of Utah Lake at compromise elevation (4489.045 feet) is approximately 870,000 acre-feet. Of this, approximately 128,300 acre-feet is inactive storage (verbal communication, Brad Gardner, Utah Lake-Jordan River Commissioner). The inactive storage elevation is 9.20 feet below compromise elevation. The active storage capacity of Utah Lake is 741,700 acre-feet. The average annual inflow (1951-90) to Utah Lake from all sources is about 726,000 acre-feet. Of this, 346,000 acre-feet is discharged to the Jordan River and about 380,000 acre-feet is lost to evaporation.

3.2 Distribution Guidelines

In distributing the waters of Utah Lake among the primary and secondary storage rights in the Lake, the following guidelines will be followed:

3.2.1 The annual diversion requirement for the primary and secondary storage rights in Utah Lake are as set forth in Table 1.

3.2.2 The water users of Utah Lake are responsible to maintain the pumps and channels in Utah Lake to allow water to be withdrawn from the lake down to 9.20 feet below compromise elevation.

3.2.3 In order to protect the primary storage rights during consecutive years of drought, the first 125,000 acre-feet of active storage capacity in Utah Lake shall be dedicated solely for the use of the primary storage rights when all other active storage has been used. Such 125,000 acre-feet of storage is hereafter referred to as "primary storage".

3.2.4 The remaining 616,700 acre-feet of active storage in Utah Lake up to compromise level, which may be stored in Utah Lake or in upstream reservoirs (subject to call by Utah Lake water rights, as set forth under Section 4.2 of this document), shall be referred to as "system storage". System storage is to be used to supply the annual diversion requirements of both primary and secondary storage rights.

Table 1 - Annual diversion requirement for primary and secondary storage rights in Utah Lake. The quantities of water for the irrigation rights are based on the irrigated acreages (sole supply acreage) set forth in the Welby-Jacob memorandum decisions and an irrigation duty of 5.0 acre-feet per acre. For the municipal and industrial rights the allowable annual diversion as set forth under the water right(s) was used.

WR NUMBER	Primary Storage Rights (1870)	Irrigated Acreage	Acre-feet
59-3499	Utah and Salt Lake Canal Company	7,063.65	35,318
59-5269	SLCWCD[1] - Salt Lake County Water Conservancy District	2,071.01	10,355
59-3500	South Jordan Canal Company	4,850.05	24,250
59-5270	SLCWCD[1]	1,076.92	5,385
57-7637	East Jordan Irrigation Company	8,092.96	40,465
59-5268	SLCWCD[1]	1,587.04	7,935
59-3496	North Jordan Irrigation Company	1,069.99	5,350
57-5272	SLCWCD	2,099.72	10,499
5722	SLCWCD[1]		
57-7624	Salt Lake City	Municipal	11,000
59-7624	CUWCD	Municipal	25,000
59-3517	Kennecott Utah Copper Corporation	Ind	13,750
	Total for Primary Rights		189,307
	Secondary Storage Rights	Acreage	Acre-feet
59-13	Utah Lake Distributing Co. (1908)	7,945.37	39,727
59-5271	SLCWCD[1]	687.81	3,439
57-23	Draper Irr. Co. & Sandy Canal Co. (1908)	2,100	10,500
59-5273	SLCWCD	400	2,000
59-14, 15 & 20	Central Utah Water Conservancy Dist. (Kenn. Storage Rights 1912)[2]	Ind	57,073
	Total for Secondary Rights		112,739
	Overall Total		302,046

[1] Rights/shares held by respective irrigation companies in behalf of Salt Lake County Water Conservancy District by agreement dated September 19, 1988.
[2] Does not include any storage which may be claimed/allowed under 59-23

3.2.5 All waters stored upstream and which is subject to call under the priority of the Utah Lake rights shall be delivered to Utah Lake, according to priority, when either the active storage in Utah Lake is at or below 125,000 acre-feet or the diversion requirements of earlier priority water rights in Utah Lake are not satisfied.

3.2.6 When all the system storage in Utah Lake and upstream reservoirs has been used, the secondary rights shall cease diversions. At such time, the active storage in Utah Lake shall be at or below 125,000 acre-feet.

3.2.7 After all of the system storage in Utah Lake and in upstream reservoirs has been used, and secondary rights have ceased diversions, the primary storage shall be allocated to the primary rights in the following percentages and will be available on demand within the constraints of the respective water rights:

Table 2 - The percentage of primary storage in Utah Lake allocated to each primary water right.

WATER RIGHT NUMBER(S)	OWNER	
59-3499	Utah and Salt Lake Canal Company	18.7%
59-3500	South Jordan Canal Company	12.8%
57-7637	East Jordan Irrigation Company	21.4%
59-3496	North Jordan Irrigation Company	2.8%
57-7624	Salt Lake City	5.8%
59-5268/5273, 5722	Salt Lake County Water Conservancy District	18.0%
57-7624	Central Utah Water Conservancy District	13.2%
59-3517	Kennecott Utah Copper Corporation	7.3%

4.0 Relationship of Storage Rights in Utah Lake and Upstream Reservoirs

4.1 Background

The relationship between upstream storage water rights and storage rights in Utah Lake must be clarified so all of the storage reservoirs within the Utah Lake drainage basin can be regulated in accordance with their respective priority dates. In reviewing the water rights in the basin it appears that the upstream storage reservoirs have a unique relationship with the Utah Lake storage rights. Therefore, this section addresses only the storage rights. Direct flow rights are addressed independently in Section 5.

The upstream storage rights are, in general, later in priority than the Utah Lake storage rights, with only a few exceptions.

However, in analyzing the storage rights within the basin, it appears that in most years, the existing storage reservoirs can divert and use water without impairing the prior rights in Utah Lake. Although during drought years, this may not be the case.

The State Engineer has studied the historical practices and water supply conditions in the basin. From these studies, it appears that adequate safeguards can be developed to allow upstream reservoirs to divert and store water during most periods of time without impairing prior water rights. However, these safeguards generally require that predictions of the total water supply be made early in the year. Predicting whether the rights in Utah Lake will receive their full annual diversion requirement is difficult early in the year. As the year progresses, and the water supply conditions become more apparent, these predictions can be made with a higher degree of confidence. In order to allow later priority upstream rights to store water, criteria are needed to determine when the rights in Utah Lake will likely be satisfied (see Section 4.2). Until the prior storage rights in Utah Lake are satisfied, water stored upstream will be held as system storage, subject to call by water rights in Utah Lake. Also, provisions to replace or exchange water to Utah Lake during drought periods to allow storage upstream will be considered.

Using the guidelines of Section 4.2 will ensure with a high degree of certainty that the rights in Utah Lake will be satisfied. These guidelines dictate when the upstream reservoirs can convert their system storage to what is referred to as priority storage. After the water is converted to priority storage, it is no longer subject to call and can then be diverted for use.

Under this proposal, storage waters will be accounted for based on a November through October period. The irrigation season in much of the Utah Lake drainage runs from about April through October, except in the higher elevations. During the non-irrigation season, the water demand is much lower than during the irrigation season and generally the storage season begins in November.

4.2 Distribution Guidelines

In order to maximize the beneficial use of the water and still protect prior rights, the State Engineer is proposing the following criteria to govern the distribution of water between storage rights in Utah Lake and reservoirs on upstream tributaries.

4.2.1 Upstream storage rights junior to Utah Lake water rights may store water under their respective priority dates relative to each other and subject to the conditions set forth in this section.

4.2.2 System storage is defined as the top 616,700 acre-feet of active storage capacity in Utah Lake and is used to satisfy the

diversion requirement of both primary and secondary rights. Any portion of this 616,700 acre-feet stored upstream which is subject to call by Utah Lake, as provided for under paragraph 4.2.5, shall also be accounted for as system storage.

4.2.3 Priority storage is defined to be the legal storage under a reservoirs' water right and is not subject to call by any other water right.

4.2.4 Any water stored by junior appropriators before the total system storage in or available to Utah Lake exceeds the quantities set forth in Table 3, is subject to call by the rights served from Utah Lake.

4.2.5 System storage held in upstream reservoirs shall not be diverted for use and must be held in storage and available for release to Utah Lake, until such storage is converted to priority storage according to the criteria in Table 3 or replacement water is provided.

4.2.6 Whenever the total system storage exceeds the values set forth in Table 3, any excess system storage shall be converted to priority storage. Water is converted from system to priority storage according to the priority dates of the respective rights, and in accordance with any other restrictions applicable to a particular water right.

4.2.7 Once water has been converted to priority storage or is designated as priority storage by the river commissioner at the time it is stored, it can be released from the reservoir and used as provided for under the respective water right.

4.2.8 Any time the storage capacity in Utah Lake drops below the primary storage capacity (the first 125,000 acre-feet of active storage capacity), upstream storage rights with later priority dates will not be allowed to divert water to storage.

4.2.9 Any time the active storage capacity in Utah Lake drops below the primary storage level (125,000 acre-feet), the Utah Lake rights may call on the system storage water which has been held upstream by junior appropriators. The quantity subject to call will be limited to the lesser of either the quantity of upstream system storage or the amount needed to satisfy the diversion requirements and bring Utah Lake up to the primary storage level.

Table 3 - Quantity of total system storage required before junior priority upstream storage reservoirs can convert their system storage to priority storage.

Date	System storage in Utah Lake and/or Upstream Reservoirs (units: ac-ft)
November 1	616,700
December 15	616,700
January 15	616,700
February 15	616,700
March 15	615,000
April 15	575,000
May 15	475,000
June 15	400,000
July 15	350,000
August 15	250,000
September 15	200,000
October 31	125,000

NOTE: Values can be interpolated from the table to determine system storage on any particular day.

4.2.10 System storage in upstream reservoirs can be replaced in Utah Lake with waters from other sources or other rights. Once such replacement is made, a like quantity of system storage can be converted to priority storage and used. Such replacement or exchange of water shall have prior approval of the State Engineer.

5.0 Direct Flow Rights

5.1 Background

One of the objectives of this proposed distribution plan is to administer the waters within the basin as one system. In so doing, we need to take into account what the effects of diversion and water use from a source may have on other rights in the basin. The distribution of water between all rights, except those rights specifically denoted in Sections 3.0 and 4.0 as among themselves, shall be done based upon priority. This approach distributes the water in accordance with the priority doctrine on a basin wide basis.

5.2 Distribution Guidelines

In distributing water among the water rights in the basin, except those rights addressed in Sections 3.0 and 4.0 as among themselves, the following guidelines will be used:

5.2.1 The direct flow water rights on all tributaries will be administered according to the respective priority dates. The affect that diversions from one source may have on diversions from another source will be taken into account.

5.2.2 The primary direct flow rights on the Jordan River as set forth in the Morse decree shall have a call on the water in Utah Lake [water] if the accretionary flows to the Jordan River are insufficient to satisfy their rights.

6.0 Other Distribution Issues

6.1 Background

The State Engineer believes that there are several other issues that should be considered when examining better ways to manage and distribute water in the basin. Most of these issues are directly related to improving the record keeping of imported water and enhancing the communication between the five river commissioners who are affected by this plan.

One issue that deserves special discussion is a proposed 5,000 acre-feet regulation pool in Jordanelle Reservoir (Section 6.2.4) to be used by the Provo River commissioner in distributing water. Based upon past experiences, calculating the natural flow of the Provo River from reservoir stage readings at Deer Creek Reservoir has presented numerous problems for the commissioners. It is important that the river commissioner not waste his [limited resources trying to distribute water by not having adequate resources.] time dealing with such problems. Because the direct flow rights on the Provo River are senior to nearly all the storage rights it is necessary for the commissioner to compute natural flow in the river. The precision of reservoir content measurements on Deer Creek, and presumably on Jordanelle, are inadequate for daily calculation of natural flow based on changes in reservoir content. Just .10 foot error in measurement when Deer Creek Reservoir is nearly full represents about 300 acre-feet. Thus, when the wind is blowing it can substantially affect the natural flow calculation. The result is a wide fluctuation in the natural flow available to the class A rights on the Lower Provo River. With Jordanelle Reservoir now being built, the natural flow computation for both Heber Valley rights and the Lower Provo River will be even more complicated. If the commissioner had a regulation pool he could smooth out the natural flow bypasses as they should be.

The administration of exchange applications is another important distribution issue. The basic purpose of exchange applications is to facilitate distribution. Under such an application a water user is required to measure the quantity of water released to a stream and then a like quantity can be diverted at another location. In regulating exchange applications, the State Engineer attempts to have releases and subsequent diversions occur as concurrently as possible to insure that other water rights

are not adversely effected. Some exchange applications involve waters from more than one distribution system. In such cases, the State Engineer needs to establish lines of authority and/or coordination between the river commissioners.

The State Engineer has reviewed the water rights covering the transbasin diversion into and out of the basin. Nearly all of these water rights are certificated and the rights are generally well defined. Thus, the major issue regarding transbasin diversions is better accounting procedures.

Although not addressed in the distribution guidelines, the future water quality of Utah Lake is another important issue that must be considered. Currently there are many unknowns over what the future operation of Utah Lake and upstream storage reservoirs will be. This makes it very difficult to predict the future salinity concentrations in the Lake. Under Utah water law, a water user is entitled to have his right protected as to both quantity and quality. We believe that the Central Utah Water Conservancy District and the Bureau of Reclamation could significantly affect the future salinity levels of Utah Lake by the decisions they will be making in the near future. It appears they are very aware of this problem and are looking at alternatives to control the salinity level of Utah Lake.

6.2 Distribution Guidelines

The State Engineer is proposing that the following recommendations be implemented to facilitate the distribution of water:

6.2.1 All exports of water from a river system shall be regulated by the duly appointed river commissioner for the system from which the export is made. Such diversions shall be regulated in accordance with the individual water right.

6.2.2. River commissioners shall report diversions on all systems on a water rights basis.

6.2.3 All transbasin diversions shall be equipped with real-time gages. Such data shall be accessible via a computer using a modem or other method as approved by the State Engineer.

6.2.4 The State Engineer is recommending that a 5,000 acre-foot regulation pool be established in Jordanelle Reservoir to be used by the commissioner for distribution system regulation. Such a regulation pool would be subject to space availability.

6.2.5 In regulating exchange applications, they will be administered as closely to a concurrent release and diversion basis as is feasible. Under no circumstances will deficits or credits be allowed to be carried over from year to year.

7.0 Adjudication Issues

7.1 Background

There are a number of issues that are beyond the scope of the distribution plan and will need to be addressed in the general adjudication. However, ultimately any actions taken in the adjudication will affect the distribution of water. Therefore, several adjudication issues are discussed in this document in order to apprise the water users of potential recommendations which may be made by the State Engineer to the court.

On the Provo River system there are no priority dates assigned to the class A rights on the Lower Provo River or class 1 through 17 on the Upper Provo River. The distribution of water has worked well under this system for over 70 years, and if conditions did not change we could continue to operate under the class system. However, we are beginning to see significant changes in the water use practices within the drainage basin, especially on the Provo River. To assess the potential impact as a result of a change in water use, and in order to properly administer the water rights on a basin-wide basis, it is imperative that the respective priority dates between the water rights be established. Therefore, as part of the general adjudication process, the State Engineer is proposing that priority dates for all water rights in the basin be determined.

Another issue that needs to be carefully analyzed and considered is the irrigation diversion requirement (duty) for irrigated lands in the basin. In conjunction with the proposed determination of water rights that the State Engineer must submit to the court for its consideration, an irrigation duty is recommended. In making this recommendation the State Engineer calculates the consumptive use requirements of the crops and considers the on-farm efficiency, canal losses and other related factors. The irrigation duty is expressed in terms of acre-feet per acre.

Related closely to the issue of duty is the issue of whether a delivery schedule should be implemented to specify an allowable diversion rate (Example - 1 cubic foot per second per 60 acres) during any period of the irrigation season. The total volume of water that can be diverted under the delivery schedule is the annual irrigation duty that is established.

7.2 Recommendations for the Adjudication

The State Engineer will consider making the following recommendations in his report to the court in the general adjudication:

7.2.1 All water rights within the basin shall have a priority date determined and assigned to it as part of the adjudication process.

7.2.2 An irrigation diversion requirement (duty) and delivery schedule shall be determined and submitted to the court for each subbasin or distribution system.

April 30, 1992

ATTACHMENT 1
STORAGE RIGHTS GREATER THAN OR EQUAL TO 100 ACRE-FEET
UTAH LAKE DRAINAGE BASIN DISTRIBUTION PLAN

PRIORITY DATE / RESERVOIR NAME AND CAPACITY	WRNUM	NAME	CFS	ACRE-FEET
1850/00/00				
Utah Lake 869584.0	59-3518	Kennecott Copper Corp.	30.00	21719.3
1851/00/00				
Silver Lake Reservoir 200.0	55-6951	Lehi Irrigation Company	66.60	
	55-6953	Pleasant Grove Irr. Co.		38.0
	55-7199	American Fork Irr. Co.		95.2
1853/00/00				
Utah Lake 869584.0	59-3496	North Jordan Irr. Co.	27.54	5350
	59-3517	Kennecott Copper Corp.	38.40	13750.0
	59-5272	North Jordan Irr. Co. (SLCWCD)	51.49	10000.0
	59-5722	North Jordan Irr. Co. (SLCWCD)	2.57	498.62
1858/00/00				
Goshen Reservoir 200.0	53-988	Goshen Irr. and Canal Co.	19.30	
Silver Lake Flat Reservoir 1040.0	55-6954	American Fork Irr. Co.		920.0
	55-7062	Lehi Irr. Co.		920.0
	55-7198	Pleasant Grove Irr. Co.	441.00	
1900/00/00[1]				
Kenneth Anderson Reservoir 132.0	55-5621	Kenneth Anderson	4.00	
1870/00/00				
Utah Lake 869584.0	53-1031	South Jordan Canal Company		345.73
	53-1032	South Jordan Canal Company		145.21
	59-3499	Utah & S. L. Canal Co.	188.36	35318
	59-3500	South Jordan Canal Company	116.20	23138.87
	59-5269	Utah & S. L. Canal Co. (SLCWCD)	55.50	10355.04
	59-5270	South Jordan Canal Co. (SLCWCD)	25.80	5384.6
1875/00/00				
Smith Reservoir 106.6	51-65	Pace, David Joseph	0.50	
1877/00/00				
Utah Lake 869584.0	57-7637	East Jordan Irr. Co.	142.13	40465
	59-5268	East Jordan Irr. Co. (SLCWCD)	27.87	7935.18
1879/00/00				
Utah Lake 869584.0	57-7624	Salt Lake City	45.83	11000.0
		Central Utah Water Cons. Dist.	104.17	25000.0
1880/00/00				
Deer Creek Reservoir 152564.0				

PRIORITY DATE / RESERVOIR NAME AND CAPACITY / WRNUM	NAME	CFS	ACRE-FEET
55-7060	USA Bureau of Reclamation	7.90	2900.0
55-7061	USA Bureau of Reclamation	1.43	500.0
1887/00/00			
Center Creek Reservoir #5 166.4			
unnamed reservoir 86.2			
Center Creek Reservoir #2 61.2			
Center Creek Reservoir #1 267.4			
55-1440	Center Creek Irr. Co.		581.2
1890/00/00			
Smith Reservoir 106.6			
51-67	Park, Boyd L. & Margaret F. Johnson, Hal C. & Madge L. Jensen, Grant C.	0.40	
1891/00/00			
Witt's Lake Reservoir 853.0			
55-1494	Lake Creek Irr. Co.		853.0
1893/00/00			
Deer Valley Reservoir 172.0			
55-1495	Lake Creek Irr. Co.		172.0
1895/01/12			
Mona Reservoir 21078.0			
53- 995	Currant Creek Irr. Co.		21078.0
1898/00/00[1]			
Big East Lake 670.0			
Decree	Payson City		
1966/00/00[1]			
Tibble Fork Reservoir 259.0			
55-6955	Pleasant Grove Irr. Co.		178
55-7071	Lehi Irrigation Company		178
55-7200	American Fork Irr. Co.		178
1900/00/00			
Center Creek Irrig. Reservoir #4 150.0			
55-1491	Baird, William H.		26.94
Smith Reservoir 106.6			
51-4356	Park, Boyd L. & Margaret F. Johnson, Hal C. & Madge L. Jensen, Grant	1.50	
1902/00/00			
Mill Hollow Reservoir 316.7			
55-7321	USA Forest Service		
1902/00/00[2]			
Box Lake 300			
Decree	Payson City		300.0

PRIORITY DATE / RESERVOIR NAME AND CAPACITY / WRNUM	NAME	CFS	ACRE-FEET
1904/00/00[2]			
Jones Reservoir 176.0			
55-8162	Lake Creek Irr. Co.		176.0
1905/08/22			
Trial Lake 830.0			
Wall Lake 1015.0			
Washington Lake 1360.0			
55-11108	Timpanogos Irrigation Co. Wasatch Irrigation Company		3205.0
55-11558	Provo Reservoir Company		3205.0
1908/09/15			
North Fork Lake #1 (or Weir Lake) 116.0			
North Fork Lake #2 (or Pot Lake) 46.0			
55-11110	Provo Reservoir Water User's Co.		162.0
North Fork Lake #3 (or Long Lake) 824.1			
55-11111	Provo Reservoir Co.		824.1
North Fork Lake #4 (or Island Lake) 97.7			
55-11112	Provo Reservoir Water User's Co.		97.7
North Fork Lake #5 108.0			
55-11113	Provo Reservoir Water User's Co.		108.0
North Fork Lake #6 420.0			
55-11114	Timpanogos Irr. Co.		227.0
55-11116	Timpanogos Irr. Co.		192.5
Lost Lake (or Fire Lake) 1155.0			
55-11115	Provo Reservoir Co.		368.76
Lost Lake #2 (or Tea Pot Lake) 140.0			
55-11117	Provo Reservoir Co.		140.0
Star Lake 313.9			
55-11118	Provo Reservoir Co.		313.9
Marjorie Lake 285.0			
55-11119	Timpanogos Irr. Co.		175.9
55-11560	Timpanogos Irr. Co.		84.1
Washington Lake #3 38.0			
55-11120	Provo Reservoir Water User's Co.		38.0
Lost Lake Reservoir 1155.0			
55-11559	Provo City Corporation		321.78
1908/10/27			
Utah Lake 869584.0			
57-23	Draper Irr. Co./Sandy Canal Co.	50.40	10500
59-13	Utah Lake Dist. Co.	124.24	39727
59-5271	Utah Lake Dist. Co. (SLCWCD)	10.76	3439.03
59-5273	Draper I.C./Sandy C.C. (SLCWCD)	9.60	2000.0
1909/08/06			
Utah Lake 869584.0			
59-14	Central Utah Water Cons. Dist.		43739.0
59-15	Central Utah Water Cons. Dist.		10984.0
1909/11/12			
Big Elk Lake Reservoir 500.0			
55-11550	Washington Irr. Co.		500.0

PRIORITY DATE / RESERVOIR NAME AND CAPACITY / WRNUM	NAME	CFS	ACRE-FEET	
1911/02/28				
Utah Lake 869584.0				
59-20	Central Utah Water Cons. Dist.		2350.0	
1917/02/03				
Big Elk Lake Reservoir 500.0				
55-11551	Washington Irr. Co.		371.1	
1924/08/25				
Deer Creek Reservoir 152564.0				
35-8737	USA Bureau of Reclamation	1000.00	136500.0	
55-80				
35-8739	USA Bureau of Reclamation		74000.0	Echo Res Exch
35-8740	USA Bureau of Reclamation	210.00		
1936/00/00[1]				
Maple Lake 130.0				
Decree	Payson City			
1936/04/03				
Deer Creek Reservoir 152564.0				
55-262	USA Bureau of Reclamation		30000.0	
1936/06/25[3]				
Deer Creek Reservoir 152564.0				
43-341	USA Bureau of Reclamation		50000.0	
43-343	USA Bureau of Reclamation	50.00	5000.0	
1944/08/31				
Deer Creek Reservoir 152564.0				
43-344	USA Bureau of Reclamation	21.00	4288.0	
1945/06/11				
Deer Creek Reservoir 152564.0				
55-295	USA Bureau of Reclamation		100000.0	
1947/05/01				
Summit Creek Reservoir 841.0				
51-1161	Summit Creek Irr. & Canal Co.		841.0	
1951/05/08				
Deer Creek Reservoir 152564.0				
55-577	USA Bureau of Reclamation	1.50		
1959/11/30				
Mill Hollow Reservoir 316.7				
55-965	State of Utah Div. of Wild. Res.	1.00		
1964/11/19				
Hayes Reservoir 70000.0				
Mona Reservior Enlargement 70000.0				
Utah Lake 869584.0				
Jordanelle Reservoir 335020.0				
43-3822	USA Bureau of Reclamation		499937.46	

PRIORITY DATE / RESERVOIR NAME AND CAPACITY / WRNUM	NAME	CFS	ACRE-FEET
1971/03/18			
Jordanelle Reservoir 335020.0			
55-4494	USA Bureau of Reclamation		300000.0
1976/08/17			
Lost Lake Reservoir 1155.0			
55-5789	Provo City		538.0
1976/12/09			
Lindsay Reservoir 175.0			
55-5846	Christensen, Carole Lee		50.0

[1] Date dam was built.

[2] Date of Decree.

[3] Deliveries via Duchesne Tunnel

Note: There are several small reservoirs covered by the 1898 Center Creek Decree, the 1902 Peeteetneet Creek Decree, and the 1904 Lake Creek Decree for which no priority dates are given.

FILENAME: USTFIL.UTL

April 30, 1992

ATTACHMENT 2
DIRECT FLOW RIGHTS ON THE JORDAN RIVER
UTAH LAKE DRAINAGE BASIN DISTRIBUTION PLAN

Priority Date	Canal/Ditch	Flow (cfs)	Water Right Numbers
1850	Utah & Salt Lake/North Jordan	30.0	59-3518
1850	Bennion Mill Race	5.0	59-3512, 59-3525 59-3532, 59-3522 59-3530, 59-3503 59-3495, 59-3533 59-3521
1850	Gardner Mill Race	5.3	59-3491, 59-3509 59-3529, 59-3504 59-3535, 59-3510 59-3507, 59-3540
1853	North Jordan Canal	38.4	59-3517
1855	Galena Canal	0.5	57-7644, 57-7657
1855	Galena Canal	1.4	57-7646, 57-7660 57-1802
1855	Galena Canal	2.8	57-7630, 57-7641 57-8925, 57-7645 57-7640, 57-7647 57-7648
1855	Galena Canal	0.6	57-7620, 57-7638
1859	Beckstead Ditch	12.0	59-3924
1864	Mousley Ditch	2.0	57-7636, 57-7658 57-7629
1873	Galena Canal	8.0	57-7625
1873	Galena Canal	9.0	57-7626
1874	Galena Canal	0.7	57-7634, 57-7633 57-7649, 57-7643
1878	Galena Canal	1.2	57-7632
1878	Galena Canal	1.4	57-7642
1912	Utah & Salt Lake/North Jordan	100.0	59-23
1918	Utah & Salt Lake/North Jordan	50.0	59-30